

Beyond the Usual Suspects: Abdominal Wall Metastases in Prostate Cancer Diagnosed by ^{68}Ga -PSMA PET/CT

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Abstract

^{68}Ga -PSMA PET imaging has revolutionized both diagnosis and radioligand therapy selection in patients with metastatic prostate cancer. We report the case of a 63-year-old man with prostate adenocarcinoma who underwent radical prostatectomy followed by radiation therapy and ADT. Found to have rising PSA levels and referred for ^{68}Ga -PSMA PET/CT for restaging. ^{68}Ga -PSMA PET/CT showed multiple suspicious ^{68}Ga -PSMA PSMA avid mediastinal lymph nodes and an avid lesion in the right lower anterior abdominal wall; suspicious for metastasis. Ultrasonography guided biopsy showed metastatic prostate adenocarcinoma. In our cases, ^{68}Ga -PSMA PET/CT identified the unexpected metastatic site which leads to change patient management and potentially improving patient outcome.

Keywords: ^{68}Ga -PSMA PET/CT; prostate cancer; anterior abdominal wall metastasis.

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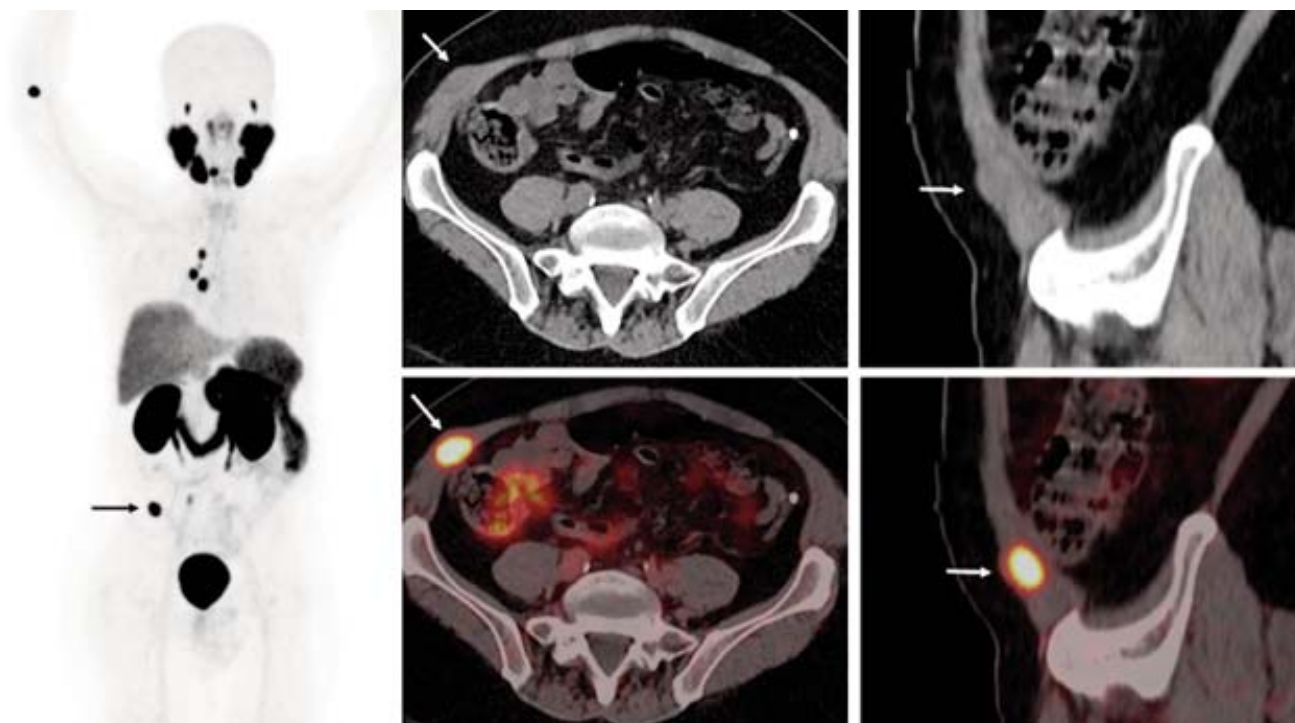


Figure-1: ^{68}Ga -PSMA PET/CT images show multiple suspicious ^{68}Ga -PSMA PSMA avid mediastinal lymph nodes. There is focal increase tracer uptake - SUV max 14.7 seen at right lower anterior abdominal wall (black arrow); corresponding CT show fusiform hypodense lesion (white arrow) measuring 2.5x2.0cm.

A 63-year-old man with known prostatic adenocarcinoma, Gleason 4+4 underwent radical prostatectomy followed by radiation therapy and ADT. Recently found to have increase in PSA level to 5.3ng/ml and referred for ^{68}Ga -PSMA PET/CT for restaging. ^{68}Ga -PSMA PET/CT showed multiple suspicious ^{68}Ga -PSMA PSMA avid mediastinal lymph nodes. There was focal increase tracer uptake of SUV max 14.7 at right lower anterior abdominal wall (black arrow); corresponding CT show

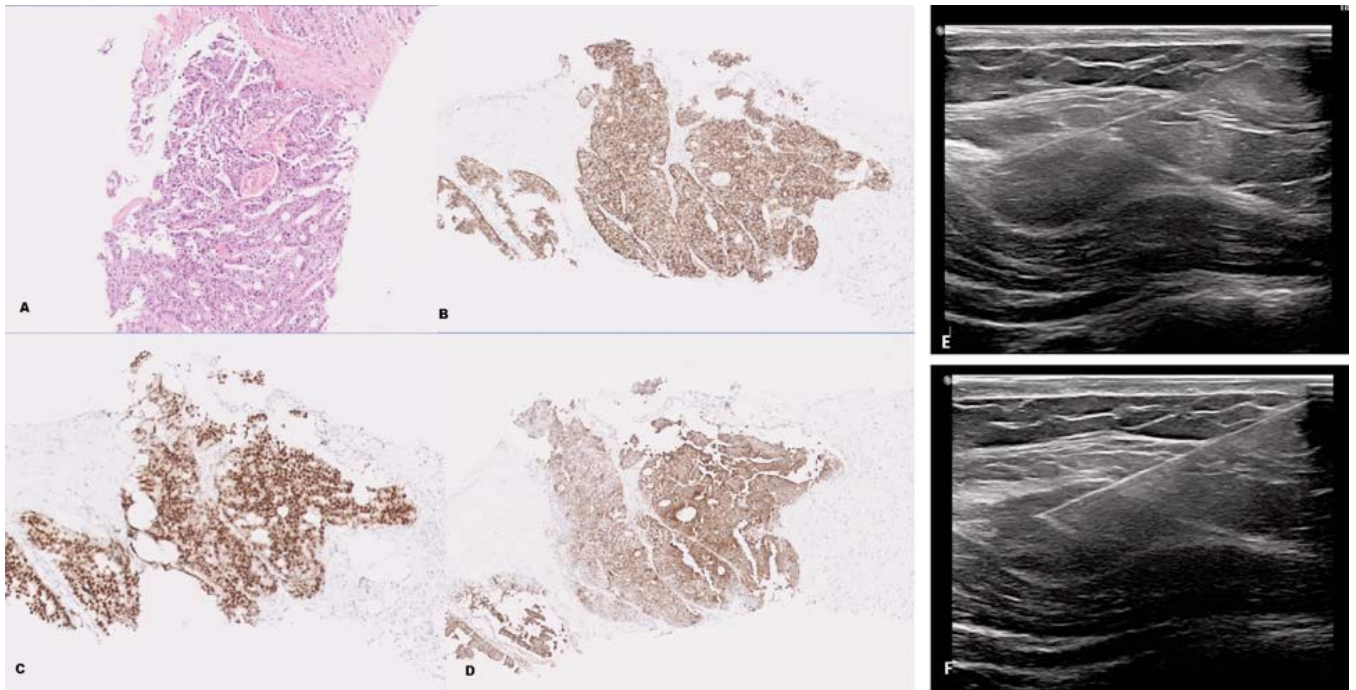


Figure-2: A: Microscopic H&E images show tumour cells arranged in acinar and solid nested pattern with Tumour cells showing moderate cytoplasm, hyperchromatic vesicular chromatin (A: 100×). Immunohistochemistry images show: (B) AMACR is strong granular positivity in tumour cells (B: 100×). (C) NKX3.1 is strong nuclear positive staining in tumour cells. (C: 100×). D: PSA IHC shows diffuse cytoplasmic staining in tumour cells (D: 100×). E and F) Ultrasonography show the right anterior abdominal lesion, accessed under US guidance and multiple (3) cores of the lesion was performed using 18/16 G needle using coaxial technique.

fusiform hypodense lesion (white arrow) measuring 2.5x2.0cm suspicious for metastasis. Ultrasonography guided biopsy showed metastatic prostate adenocarcinoma.

^{68}Ga -PSMA is a promising tracer for both staging and detection of biochemical recurrence in prostate cancer.¹ Prostate-specific membrane antigen (PSMA) is a type II transmembrane glycoprotein highly expressed in over 80% of prostate cancer cells, making it an ideal molecular target for diagnostic imaging. Notably, ^{68}Ga -PSMA PET/CT can detect prostate cancer even at very low PSA levels, with detection rates approaching 40% in patients with PSA values below 0.5 ng/mL.²

The bones and lymph nodes are by far the most common sites of distant metastasis in prostate cancer, with the lungs and liver much less commonly affected. ^{68}Ga -PSMA PET may now offer the ability to identify small volume metastases at atypical locations.^{3,4} The identification of unexpected metastatic sites through ^{68}Ga -PSMA PET/CT has significant implications for treatment planning. Accurate localization of metastases allows for targeted therapies, including surgical resection or metastasis-directed therapy, potentially improving outcomes for patients with oligometastatic disease. Our case highlights the detection of unexpected metastases on ^{68}Ga -PSMA PET/CT and potential guide to selection of appropriate therapy.

References

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